Evolution

Revision as of 19:23, 12 December 2023 by ELApro (talk | contribs) *(→S: Scheffler as quoted by Lane: Molecular biologists may have ignored mitochondria because they did not immediately recognize the far-reaching implications &applications..)*
(diff) ← Older revision | Latest revision (diff) | Newer revision → (diff)

Not to be confused with Evolution (film).

Evolution means a process of change or transformation, and is commonly used to refer to biological, genetic or organic evolution, the changes in populations of organisms over generations, the processes by which such changes occur, and theories regarding them. Offspring differ from their parents in various ways.

I see the triumph of good over evil as a manifestation of the error-correcting process of evolution. ~ Jonas Salk

Arranged alphabetically by author or source:
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A

- The doctrine of Reincarnation differs from the accepted theory of Evolution in admitting a gradual but continuous evolution of the subtle body through many gross forms. The gross body may appear or disappear, but the subtle body continues to exist even after the dissolution of the gross body and re-manifests itself in some other form...The theory of Reincarnation when properly understood will appear as a supplement to the theory of Evolution. Without this most important supplement the Evolution theory will never be complete and perfect. Evolution explains the process of life, while Reincarnation explains the purpose of life. Therefore, both must go hand in hand to make the explanation satisfactory in every respect.
  - Swami Abhedananda, in *Vedanta Philosophy: Five Lectures on Reincarnation*, (http://www.gutenberg.org/ebooks/7377) III. Evolution and Reincarnation. (1907)
- Evolution of the body depends upon the evolution of the germ of life or the individual soul. When these two are combined the explanation becomes perfect. The theory of Reincarnation is a logical necessity for the completion of the theory of Evolution. If we admit a continuous evolution of a unit of the germ of life through many gross manifestations then we unconsciously accept the teachings of the doctrine of Reincarnation. In passing through different forms and manifestations the unit of life does not lose its identity or individuality. As an atom does not lose its identity or individuality (if you allow me to suppose an atom has a kind of individuality) although it passes from the mineral, through the vegetable, into the animal, so the germ of life always preserves its identity or individuality although it passes through the different stages of evolution.
  - Swami Abhedananda, in *Vedanta Philosophy: Five Lectures on Reincarnation*, (http://www.gutenberg.org/ebooks/7377) III. Evolution and Reincarnation. (1907)

- **The world has arisen in some way or another.** How it originated is the great question, and Darwin's theory, like all other attempts to explain the origin of life, is thus far merely conjectural. I believe he has not even made the best conjecture possible in the present state of our knowledge.
  - Louis Agassiz, *Evolution and Permanence of Type* (Atlantic Monthly, January 1874)
- We don't use the word *evolution.* We hope to walk a very thin line. On one hand we want the scientists to say this film is right and accurate, and yet we don't want to have the church picketing the film.
  - Irwin Allen, Oscar Godbout. "From primordial ooze to primates". The New York Times. 13 February 1955. p. 113.
- The stream of tendency in which all things seek to fulfil the law of their being.
  - Matthew Arnold; used also by Emerson; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.
- There are many aspects of the universe that still cannot be explained satisfactorily by science; but ignorance only implies ignorance that may someday be conquered. To surrender to ignorance and call it God has always been premature, and it remains premature today.
  - Isaac Asimov, "The “Threat” of Creationism (http://www.stephenjaygould.org/ctrl/azimov_creationism.html)" in *New York Times Magazine* (14 June 1981) reprinted *Science and Creationism* (1984) edited by Ashley Montagu, page 184
- Observe constantly that all things take place by change, and accustom thyself to consider that the nature of the Universe loves nothing so much as to change the things which are, and to make new things like them.
  - Marcus Aurelius, *Meditations*, Chapter IV. 36; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.
- The keystone argument of *Signature of the Cell* [by Stephen C. Meyer] is that chance, by itself, cannot account for the genetic information found in the genomes of organisms. I agree. And so does every evolutionary scientist.
  - Francisco Ayala, BioLogos blog post "On Reading the Cell's Signature" (http://biologos.org/blog/on-reading-the-cells-signature/) 7 January 2010

B

- There is a very interesting analogy between the evolution of the atom and of man in the two methods of unfoldment that are followed. We have seen that the atom has its own atomic life, and that every atom of substance in the solar system is likewise a little system in itself, having a positive centre, or central sun, with the electrons, or the negative aspect, revolving in their orbits around it. Such is the internal life of the atom, its self-centred aspect.
  - Alice Bailey, *The Consciousness of the Atom* (1922)
- The atom is now being studied along a newer line... Much of the earlier teaching of physical science has been revolutionised by the discovery of radium, and the more scientists find out, the more it becomes apparent (as they themselves realise), that we are standing on the threshold of very great discoveries, and are on the eve of profound revelations.
  In the human being, as he evolves and develops, these two stages can equally be seen. There is the early or atomic stage, in which a man's whole centre of interest lies within himself, within his own sphere, where self-centredness is the law of his being, a necessary protective stage of evolution. He is purely selfish, and concerned primarily with his own affairs. This is succeeded by a later stage, in which a man's consciousness begins to expand, his interests begin to lie outside his own particular sphere, and the period arrives in which he is feeling for the group to which he belongs. This stage might be viewed as corresponding to that of radio-activity. He is now not only a self-centred life, but he is also beginning to have a definite effect upon his surroundings. He is turning his attention from his own personal selfish life, and is seeking his greater centre.

From being simply an atom he is, in his turn, becoming an electron, and coming under the influence of the great central Life which holds him within the sphere of Its influence.

  - Alice Bailey, *The Consciousness of the Atom* (1922)

- Evolution, as we understand it, and as it must be studied by the human intellect, is the story of the evolution of consciousness, and not the story of the evolution of the form. This latter evolution is implicit in the other, and of secondary importance from the occult angle.

  - Alice Bailey, *A Treatise on the Seven Rays: Volume 2: Esoteric Psychology II*, p. 57, (1941)

- Under the great evolutionary process, men and races differ in mental development, in physical stamina, in creative possibilities, in understanding, in human perceptiveness, and in their position upon the ladder of civilization; this, however, is temporary, for the same potentialities exist in all of us without exception, and will eventually display themselves.

  - Alice Bailey, *The Problems Of Humanity*, p. 90. (1944)

- The Law of Rebirth (Reincarnation) is a great natural law upon our planet... It is a process, instituted and carried forward under the Law of Evolution... It is closely related to, and conditioned by, the Law of Cause and Effect.

  - Alice Bailey, *The Reappearance of the Christ,* Chapter 5, (1948)

- Molecular evolution is not based on scientific authority. . . . There are assertions that such evolution occurred, but absolutely none are supported by pertinent experiments or calculations. Since no one knows molecular evolution by direct experience, and since there is no authority on which to base claims of knowledge, it can truly be said that . . . the assertion of Darwinian molecular evolution is merely bluster.

  - Michael Behe, *Darwin's Black Box: The Biochemical Challenge to Evolution* (1996)

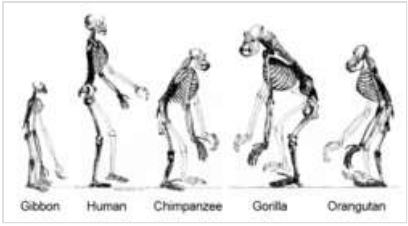
- Evolution no longer looks like a random process to me.

  - Michael Behe, Cleveland *Plain Dealer*, "Evolution of a clash", 20 August 2005

- Currently, I see in Germany, but also in the United States, a somewhat fierce debate raging between so-called "creationism" and evolutionism, presented as though they were mutually exclusive alternatives: those who believe in the Creator would not be able to conceive of evolution, and those who instead support evolution would have to exclude God. This antithesis is absurd because, on the one hand, there are so many scientific proofs in favour of evolution which appears to be a reality we can see and which enriches our knowledge of life and being as such. But on the other, the doctrine of evolution does not answer every query, especially the great philosophical question: where does everything come from? And how did everything start which ultimately led to man?

  - Pope Benedict XVI, remarks (http://www.vatican.va/holy_father/benedict_xvi/speeches/2007/july/documents/hf_ben-xvi_spe_20070724_clero-cadore_en.html) at Auronzo di Cadore, 24 July 2007

- Darwin's theory of evolution is the last of the great 19th century mystery religions. And as we speak it is now following Freudianism and Marxism into the nether regions, and I'm quite sure that Freud, Marx, and Darwin



The only part of evolution in which any considerable interest is felt is evolution applied to man. A hypothesis in regard to the rocks and plant life does not affect the philosophy upon which one's life is built. Evolution applied to fish, birds and beasts would not materially affect man's view of his own responsibilities except as the acceptance of an unsupported hypothesis as to these would be used to support a similar hypothesis as to man. The evolution that is harmful—distinctly so—is the evolution that destroys man's family tree as taught by the Bible and makes him a descendant of the lower forms of life. This … is a very vital matter. ~ William Jennings Bryan

Evolution, as we understand it, and as it must be studied by the human intellect, is the story of the evolution of consciousness, and not the story of the evolution of the form. This latter evolution is implicit in the other, and of secondary importance from the occult angle. ~ Alice Bailey

are commiserating one with the other, in the dark dungeon where discarded gods gather. [audience laughs]

  - David Berlinski, debate (http://www.philvaz.com/apologetics/p45.htm) "Resolved: The Evolutionist Should Acknowledge Creation" organized by William F. Buckley, Jr. PBS Firing Line, debate staged 4 December 1997, telecast 19 December 1997

- Narrowing down our view to the chain of which our globe is one, we see life-waves sweep round informing the kingdoms of nature, the three elemental, the mineral, vegetable, animal, human. Narrowing down our view still further to our own globe and its surroundings, we watch human evolution, and see man developing self-consciousness by a series of many life-periods; then centering on a single man we trace his growth and see that each life-period has a threefold division that each is linked to all life-periods behind it reaping their results, and to all life-periods before it sowing their harvests, by a law that cannot be broken; that thus man may climb upwards with each life-period adding to his experience, each life-period lifting him higher in purity, in devotion, in intellect, in power of usefulness, until at last he stands where They stand who are now the Teachers, fit, to pay to his younger brothers the debt he owes to Them. p. 39

  - Annie Besant, *The Ancient Wisdom*, (1897)

- The second great wave of evolution, the evolution of form, and the third great wave, the evolution of self-consciousness, will be dealt with later on. These three currents of evolution are distinguishable on our earth in connection with humanity; the making of the materials, the building of the house, and the growing of the tenant of the house, or, as said above, the evolution of spirit-matter, the evolution of form, the evolution of self-consciousness. If the reader can grasp and retain this idea, he will find a helpful clue to guide him through the labyrinth of facts. p. 45

  - Annie Besant, *The Ancient Wisdom*, (1897)

- If it be admitted that the soul of the savage is destined to live and evolve, and that he is not doomed for eternity to his present infant state, but that his evolution will take place after death and in other worlds, then the principle of soul-evolution is conceded, and the question of the place of evolution alone remains.

  - Annie Besant, *The Ancient Wisdom*, (1897)

- Were all souls on earth at the same stage of evolution, much might be said for the contention that further worlds are needed for the evolution of souls beyond the infant stage. But we have around us souls that are far advanced, and that were born with noble mental and moral qualities. p. 108

  - Annie Besant, *The Ancient Wisdom*, (1897)

- Human evolution is the evolution of the Thinker... At first, as little conscious as a baby's earthly body, he almost slept through life after life, till the experiences playing on him from without awakened some of his latent forces into activity; but gradually he assumed more and more part in the direction of his life, until, with manhood reached, he took his life into his own hands, and an ever-increasing control over his future destiny. p. 131

  - Annie Besant, *The Ancient Wisdom*, (1897)

- I want to lay before you an intelligible conception of evolution, taking it on its two sides, that of the evolving life and that of the developing forms. I begin by laying before you a sketch of the methods of "Ancient and Modern Science," the direction in which each has worked, and is working, the ultimate union that, we hope, may take place between them. For what could more fully presage the good of the whole world, what could promise more happily for the relationship between the different races of humanity, than to draw together on the plane of mind the science of antiquity and of modern days, the science of the East and of the West, and, by wedding them to each other, draw together the nations that are now divided, and make objective that brotherhood of humanity of which we dream.

  - Annie Besant, in *Evolution of Life and Form*, Four lectures delivered at the twenty-third anniversary meeting of the Theosophical Society at Adyar, Madras, (http://www.gutenberg.org/ebooks/40224) (1898)

- What is life or consciousness—for the two terms are synonymous? It is the power to answer to vibrations, the power to respond—that is consciousness. Evolution is the unfolding of a continually increasing power to

respond. The whole universe is full of the vibrations of Íshvara, of God. He sustains and moves the whole. Consciousness is the power in us to answer to those vibrations. All powers lie hidden within us as the oak tree lies hidden in the acorn. But it is in the process of evolution that the sapling slowly grows out of the seed. In Eternity, in the Now, all is existent, perfect; in Time only is there succession, the unfolding of one thing after another. In the changeless Point everything is present: Space is but the field for diverse sequences. Hence Time and Space are the basic illusions, and are yet the fundamental conditions of thinking. Keep, I pray you, that definition of consciousness in mind, for it will govern the remainder of our study. p.17

  - Annie Besant, *Evolution of Life and Form*, (1898)

- That which we know as Yoga is the method by which evolution is quickened in the individual, and all the powers of the Self, up to the threshold of divinity, may by it be brought into manifestation in the man of the present. That is why Yoga training was necessary for the ancient scientist; he must develop in himself the three aspects of God, if he were to understand them as manifested in the universe around him. Now, at our own stage of evolution, it is specially the life of Brahmâ—or the Brahmâ aspect of God—with which the human mind is coming into touch, because the mind in man is the reflection of the universal mind in Kosmos. That life is the life that is the force in the atom, that vivifies every atom, nay, that brings the atom into existence, as we shall see, and remains during the whole of the growth of the universe as the fundamental life that keeps those atoms as active particles building up innumerable forms.

  - Annie Besant, *Evolution of Life and Form*, (1898)

- Evolution. — The development of higher orders of animals from the lower. Modern, or so-called exact science, holds but to a one-sided physical evolution, prudently avoiding and ignoring the higher or spiritual evolution, which would force our contemporaries to confess the superiority of the ancient philosophers and psychologists over themselves. The ancient sages, ascending to the unknowable, made their starting-point from the first manifestation of the unseen, the unavoidable, and from a strict logical reasoning, the absolutely necessary creative Being, the Demiurgos of the universe. Evolution began with them from pure spirit, which descending lower and lower down, assumed at last a visible and comprehensible form, and became matter. Arrived at this point, they speculated in the Darwinian method, but on a far more large and comprehensive basis.

  - H.P. Blavatsky, *Isis Unveiled: A Master-Key to the Mysteries of Ancient and Modern Science and Theology*, Vol. I, Before the Veil, xxxi (1877)

- Scientific accounts of our origins aren't just more accurate than religious stories; they are also a lot more interesting.

  - Paul Bloom, "The Original Colonists (https://www.nytimes.com/2012/05/13/books/review/the-social-conquest-of-earth-by-edward-o-wilson.html)" New York Times, 11 May 2012

- **The evolutionary vision is agnostic in regard to systems in the universe of greater complexity than those of which human beings have clear knowledge.** It recognizes aesthetic, moral, and religious ideas and experiences as a species, in this case of mental structures or of images, which clearly interacts with other species in the world's great ecosystem.

  - Kenneth Boulding, *Ecodynamics: A New Theory Of Societal Evolution* (1978)

- ... we need to put everything into an evolutionary framework, simply because complexity arises in biological systems by accretion and modification and not by reinvention. Thus, the properties of many of the components in our cells, whether these are mRNAs or proteins, will be conditioned not only by processes of selection for specified activities and levels because these are positively required but may also take up any value because there are no negative consequences for the organism. This ‘don't care’ condition will almost certainly be present because it is a cheap solution to the regulation problem of complex systems. Thus a 20% or a twofold increase, or indeed the very presence, of a protein may be very significant or totally irrelevant depending on whether it is following a ‘don't care’ condition. Only experiment can decide that.

  - Sydney Brenner: (2000) . "Biochemistry strikes back (https://www.cell.com/trends/biochemical-sciences/fulltext/S0968-0004(00)01722-9)". *Trends in Biochemical Sciences* **25** (12). (p. 584)

- Evolution doesn't happen without pain or loss. A lot of fish died, in order for a few to stand. The price may be worthwhile…
  - David Brin, *Kiln People* (2002), Chapter 53 (ISBN 0-765-34261-8, p. 469)
- The rise of every man he loved to trace,
  Up to the very pod O!
  And, in baboons, our parent race
  Was found by old Monboddo.
  Their A, B, C, he made them speak,
  And learn their qui, quæ, quod, O!
  Till Hebrew, Latin, Welsh, and Greek
  They knew as well's Monboddo!
  - Ballad in *Blackwood's Magazine* referring to the originator of the monkey theory, James Burnett, Lord Monboddo; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.
- If they believe it (evolution), they go back to scoff at the religion of their parents.
  - William Jennings Bryan From the transcript of the Scopes Monkey Trial fifth day's proceedings (16 Jul 1925) in John Thomas Scopes, The World's Most Famous Court Trial: Tennessee Evolution Case: a Complete Stenographic Report of the Famous Court Test of the Tennessee Anti-Evolution Act, at Dayton, July 10 to 21, 1925, Including Speeches and Arguments of Attorneys (1925), 175.
- The first objection to Darwinism is that it is only a guess and was never anything more. It is called a "hypothesis," but the word "hypothesis," though euphonious, dignified and high-sounding, is merely a scientific synonym for the old-fashioned word "guess." If Darwin had advanced his views as a guess they would not have survived for a year, but they have floated for half a century, buoyed up by the inflated word "hypothesis." When it is understood that "hypothesis" means "guess," people will inspect it more carefully before accepting it.
  - William Jennings Bryan 'God and Evolution', New York Times (26 Feb 1922), 84. Rebuttals were printed a few days later from Henry Fairfield Osborn and Edwin Grant Conklin.
- The only part of evolution in which any considerable interest is felt is evolution applied to man. A hypothesis in regard to the rocks and plant life does not affect the philosophy upon which one's life is built. Evolution applied to fish, birds and beasts would not materially affect man's view of his own responsibilities except as the acceptance of an unsupported hypothesis as to these would be used to support a similar hypothesis as to man. The evolution that is harmful—distinctly so—is the evolution that destroys man's family tree as taught by the Bible and makes him a descendant of the lower forms of life. This … is a very vital matter.
  - William Jennings Bryan 'God and Evolution', New York Times (26 Feb 1922), 84. Rebuttals were printed a few days later from Henry Fairfield Osborn and Edwin Grant Conklin.
- Why, these men would destroy the Bible on evidence that would not convict a habitual criminal of a misdemeanor. They found a tooth in a sand pit in Nebraska with no other bones about it, and from that one tooth decided that it was the remains of the missing link. They have queer ideas about age too. They find a fossil and when they are asked how old it is they say they can't tell without knowing what rock it was in, and when they are asked how old the rock is they say they can't tell unless they know how old the fossil is.
  - William Jennings Bryan In Henry Fairfield Osborn, 'Osborn States the Case For Evolution', New York Times (12 Jul 1925), XX1. In fact, the tooth was misidentified as anthropoid by Osborn, who over-zealously proposed Nebraska Man in 1922. This tooth was shortly thereafter found to be that of a peccary (a Pliocene pig) when further bones were found. A retraction was made in 1927, correcting the scientific blunder.
- The real question is, Did God use evolution as His plan? If it could be shown that man, instead of being made in the image of God, is a development of beasts we would have to accept it, regardless of its effort, for truth is truth and must prevail. But when there is no proof we have a right to consider the effect of the acceptance of an unsupported hypothesis.

- William Jennings Bryan 'God and Evolution', New York Times (26 Feb 1922), 84. Rebuttals were printed a few days later from Henry Fairfield Osborn and Edwin Grant Conklin.

- A hen is only an egg's way of making another egg.
  - Samuel Butler, *Life and Habit* (1878) p. 134

- The power of custom is enormous, and so gradual will be the change, that man's sense of what is due to himself will be at no time rudely shocked; our bondage will steal upon us noiselessly and by imperceptible approaches; nor will there ever be such a clashing of desires between man and the machines as will lead to an encounter between them. Among themselves the machines will war eternally, but they will still require man as the being through whose agency the struggle will be principally conducted. In point of fact there is no occasion for anxiety about the future happiness of man so long as he continues to be in any way profitable to the machines; he may become the inferior race, but he will be infinitely better off than he is now. Is it not then both absurd and unreasonable to be envious of our benefactors? And should we not be guilty of consummate folly if we were to reject advantages which we cannot obtain otherwise, merely because they involve a greater gain to others than to ourselves؟br With those who can argue in this way I have nothing in common. I shrink with as much horror from believing that my race can ever be superseded or surpassed, as I should do from believing that even at the remotest period my ancestors were other than human beings. Could I believe that ten hundred thousand years ago a single one of my ancestors was another kind of being to myself, I should lose all self-respect, and take no further pleasure or interest in life. I have the same feeling with regard to my descendants, and believe it to be one that will be felt so generally that the country will resolve upon putting an immediate stop to all further mechanical progress, and upon destroying all improvements that have been made for the last three hundred years. I would not urge more than this. We may trust ourselves to deal with those that remain, and though I should prefer to have seen the destruction include another two hundred years, I am aware of the necessity for compromising, and would so far sacrifice my own individual convictions as to be content with three hundred. Less than this will be insufficient."
  - Samuel Butler *Darwin among the Machines*

C

- There are many examples in evolution of a vital adaptation taking place at a cost. Anatomically, evolution seems to create a series of compromises; advantages tempered by being achieved against the constraints of the existing raw material. Upright walking has the cost of disorders in the back and acute difficulties in childbirth. Speech has the cost of a structure of the larynx which is extremely dangerous. The fact of these compromises does of course emphasize the power of the need that the advantage be achieved. If it is dangerous to speak, the pressure in its favor must have been very strong.
  - Rod Caird (https://www.imdb.com/name/nm0129037/), *Ape Man* ISBN 978-0-85766-478-5 Chapter 4, "Talking" (p. 94)

- Perhaps the most important single contribution that the study of human evolution can make, especially to the non-scientific community, is to set these racial differences in their historical context. People may still feel hostile towards one another for all kinds of irrational reasons. But the study of evolution can demonstrate just how misplaced some of those reasons are.
  - Rod Caird (https://www.imdb.com/name/nm0129037/), *Ape Man* ISBN 978-0-85766-478-5 Chapter 5, "Colonizing" (pp. 109-110)

- Evolution has solved, through adaptation, problems of survival, enabling the species to reproduce itself. Evolution in that sense is an ordinary process, applicable to every species.
  - Rod Caird (https://www.imdb.com/name/nm0129037/), *Ape Man* ISBN 978-0-85766-478-5 Chapter 6, "Making Images" (p. 135)

- A fire-mist and a planet,
  A crystal and a cell,
  A jellyfish and a saurian,

And caves where the cavemen dwell;
Then a sense of law and beauty,
And a face turned from the clod—
Some call it Evolution,
And others call it God.

- W. H. Carruth, *Each in his Own Tongue*; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.

- There was an ape in the days that were earlier,
Centuries passed and his hair became curlier;
Centuries more gave a thumb to his wrist—
Then he was a MAN and a Positivist.

  - Mortimer Collins, *The British Birds*, Stanza 5; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.

Evolutionary progress is based on the process of rebirth; reincarnation is the method of our evolution of consciousness... The effects from our previous deeds, good and bad, create the conditions of our life today, and the results of our deeds today create the conditions of the next period of life, either now or when we return in our next body. ~Benjamin Creme

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  - Benjamin Creme, in *The Ageless Wisdom, An Introduction to Humanity's Spiritual Legacy, Share International* (http://share-international.org/books/?d=AWT) (1996) p. 12.

- You might say that esotericism is the philosophy, or the science, of the evolutionary process, as it pertains to the human and the subhuman kingdoms. But it is about the evolution of consciousness, not of the physical form. If you want to know about the evolution of the physical form, turn to Darwin — he has pretty well summed up the nature of evolution as regards the form of the animal and the human kingdoms. But in terms of the evolution of consciousness, you have to turn to the esoteric — esoteric only so far; for that which is esoteric gradually becomes exoteric.

  - Benjamin Creme, in *The Ageless Wisdom, An Introduction to Humanity's Spiritual Legacy, Share International* (http://share-international.org/books/?d=AWT) (1996) p. 5.

Evolution — The process of spiritualization of matter; the way back to the Source. The casting aside of the veils of delusion and illusion leading eventually to cosmic consciousness. ~Benjamin Creme

- For all its solidity, its cities and aeroplanes and television studios and the like, this planet is really the body of expression of a Cosmic Being who gives the planet its life, and who has a plan of evolution for all the kingdoms in nature, including the human kingdom. What is really happening is that we, at our different levels, from the mineral kingdom up to the Kingdom of God itself, are carrying out an evolutionary process, which, in its summation, will make this planet a perfect expression of the thoughtform in the mind of the creating Logos

  - Benjamin Creme in *Maitreya's Mission Vol. III*, p. 349 (1997)

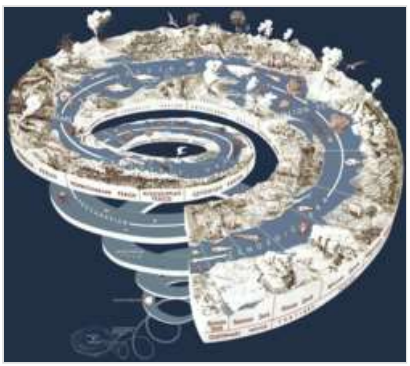
- The point is that this planet is not very evolved — not even in our solar system. It is still a 'non-sacred' planet; there are seven sacred planets and we are not one of them. That is why we have all the problems. Humanity itself is not at a very evolved stage, in terms of its future evolution. Even our solar system is not all that evolved. It is probably a quite insignificant solar system, at the edge of the galaxy.

  - Benjamin Creme in *Maitreya's Mission Vol. III*, p. 364 (1997)

- The problem for humanity is that the way of evolution is through self-sacrifice. People hate the word 'self-sacrifice', and so they do not do it, but if we do not sacrifice we do not evolve — it is as simple as that. Every one wants to evolve but no one wants to sacrifice themselves in doing so. What are we sacrificing? We sacrifice the lower for the higher: selfish, personality, desire principle for the awareness, the altruism — the forgivingness — of the soul.
  - Benjamin Creme in *Maitreya's Mission Vol. III*, p. 480 (1997)
- Evolution is not an illusion. Time is the illusion. Evolution does not proceed in time, because time does not exist. But evolution does proceed. The consciousness of the child and the consciousness of the adult are entirely different. The consciousness of a first-degree initiate at such-and-such a time in history, and the consciousness of that same soul in incarnation taking the fifth initiation, is entirely different. There has been evolution.
  Evolution necessarily takes place, because it is part of the great outbreathing of the Creator, which creates all that exists. It is the Becoming of the Creator. Under the Law of Cause and Effect, and in relation to the Law of Rebirth, evolution proceeds, not in relation to time as we imagine time but in relation to time in the sense of cyclic unfoldment — cyclic activity followed by cyclic inactivity, followed by cyclic activity; this repeated infinitely, for ever and ever.
  - Benjamin Creme in *Maitreya's Mission Vol. III,* p. 583 (1997)
- Evolution is the movement by which life knows and expands itself, becomes aware of itself, and creates further, more involved and creative aspects of itself. Evolution is part of that cosmic process by which everything which we call life finds expression in matter.
  - Benjamin Creme in *Maitreya's Mission Vol. III*, p. 585 (1997)
- Anthropological, biological]], and genetic evidence]] all put the origin of modern humans at between 200,000 and 100,000 years ago, probably in Africa. There is also much data that show an outburst of cultural behavior occurring around 50,000-40,000 years ago in Europe. That's when archaeologists date the oldest evidence of burial ceremonies, body ornaments, and cave paintings.
  - William J. Cromie, "Facing up to modern man (http://news.harvard.edu/gazette/2002/03.07/01-skulls.html)", Harvard University Gazette (7 March 2002)

D

- The cosmology of scientific materialism … considers the cosmos an absurd accident, and life within it to be no more than another accident.
  - Herman E. Daly, "Feynman's Unanswered Question (http://journals.gmu.edu/PPPQ/article/view/172)", *Philosophy and Public Policy Quarterly*, volume 26, number 1/2 (Winter/Spring 2006), p. 14
- Till o'er the wreck, emerging from the storm,
  Immortal NATURE lifts her changeful form:
  Mounts from her funeral pyre on wings of flame,
  And soars and shines, another and the same.
  - Erasmus Darwin, *Botanic Garden*, Part I, Canto IV, line 389; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.
- Authors of the highest eminence seem to be fully satisfied with the view that each species has been independently created. To my mind it accords better with what we know of the laws impressed on matter by the Creator, that the production and extinction of the past and present inhabitants of the world should have been due to secondary causes, like those determining the birth and death of the individual. When I view all beings not as special creations, but as the lineal descendants of some few beings which lived long before



Till o'er the wreck, emerging from the storm,
Immortal NATURE lifts her changeful form:
Mounts from her funeral pyre on wings of flame,
And soars and shines, another and the same. ~ Erasmus Darwin

the first bed of the Silurian system was deposited, they seem to me to become ennobled.

  - Charles Darwin, *The Origin of Species* (1859)

- I have called this principle, by which each slight variation, if useful, is preserved, by the term of Natural Selection.

  - Charles Darwin, *The Origin of Species* (1859), Chapter III

- The expression often used by Mr. Herbert Spencer of the Survival of the Fittest is more accurate, and is sometimes equally convenient.

  - Charles Darwin, *The Origin of Species* (1859), Chapter III

- Mere chance … alone would never account for so habitual and large an amount of difference as that between varieties of the same species and species of the same genus.

  - Charles Darwin, *Origin of Species* (1859) chapter IV: "Natural Selection", p. 111 (http://darwin-online.org.uk/content/frameset?pageseq=126&itemID=F373&viewtype=image)

- This belief, that Darwinian evolution is "random", is not merely false. It is the exact opposite of the truth. Chance is a minor ingredient in the Darwinian recipe, but the most important ingredient is cumulative selection which is quintessentially *non*-random.

  - Richard Dawkins, *The Blind Watchmaker* (1986) chapter 3, p. 49

- Natural selection, the blind, unconscious, automatic process which Darwin discovered … has no purpose in mind. … It does not plan for the future. It has no vision, no foresight, no sight at all. If it can be said to play the role of watchmaker in nature, it is the *blind* watchmaker.

  - Richard Dawkins, *The Blind Watchmaker* (1986) p. 5

- In any developing science there are disagreements. But scientists — and here is what separates real scientists from the pseudoscientists of the school of intelligent design — always know what evidence it would take to change their minds. One thing all real scientists agree upon is the fact of evolution itself. It is a fact that we are cousins of gorillas, kangaroos, starfish, and bacteria. **Evolution is as much a fact as the heat of the sun.** It is not a theory, and for pity's sake, let's stop confusing the philosophically naive by calling it so. Evolution is a fact.

  - Richard Dawkins, "The Illusion of Design (http://www.skeptic.com/eskeptic/05-11-23/)" *Natural History Magazine* (November 2005)

- Nature is neither kind nor unkind. She is neither against suffering nor for it. Nature is not interested in suffering one way or the other unless it affects the survival of DNA. It is easy to imagine a gene that, say, tranquilizes gazelles when they are about to suffer a killing bite. Would such a gene be favored by natural selection?
  Not unless the act of tranquilizing a gazelle improved that gene's chances of being propagated into future generations. It is hard to see why this should be so, and we may therefore guess that gazelles suffer horrible pain and fear when they are pursued to the death - as many of them eventually are. The total amount of suffering per year in the natural world is beyond all decent contemplation. During the minute that it takes me to compose this sentence, thousands of animals are being eaten alive, many others are running for their lives, whimpering with fear, others are being slowly devoured from within by rasping parasites, thousands of all kinds are dying of starvation, thirst and disease.

  - Richard Dawkins *River out of Eden*

- There can be no question that Darwin had nothing like sufficient evidence to establish his theory of evolution. … Darwin's model of evolution … , being basically a theory of historical reconstruction, … is impossible to verify by experiment or direct observation as is normal in science … Moreover, the theory of evolution deals with a series of unique events, the origin of life, the origin of intelligence and so on. Unique events are unrepeatable and cannot be subjected to any sort of experimental investigation. … His general theory, that all life on earth had originated and evolved by a gradual successive accumulation of fortuitous mutations, is

still, as it was in Darwin's time, a highly speculative hypothesis entirely without direct factual support and very far from that self-evident axiom some of its more aggressive advocates would have us believe. … The evolutionary paradigm … is more like a principle of medieval astrology than a serious twentieth century scientific theory. … One might have expected that a theory of such cardinal importance, a theory that literally changed the world, would have been something more than metaphysics, something more than a myth.

  - Michael Denton, *Evolution: A Theory in Crisis* (1986) p. 69, 75, 77, 306, 358
  - (If it were true that "a theory of historical reconstruction … is impossible to verify", then this truth would invalidate not only evolution, but also all of forensic science.)
  - (It took Darwin twenty-one years (from 1838 to 1859) to develop the core of the theory of evolution, and the theory keeps developing even to the present day. No one considers it "self-evident".)

- What is the question now placed before society with the glib assurance which to me is most astonishing? That question is this: Is man an ape or an angel? I, my lord, I am on the side of the angels. I repudiate with indignation and abhorrence those **new fangled theories**.

  - Benjamin Disraeli, speech at Oxford Diocesan Conference (1864-11-25).

- According to Goldschmidt, all that evolution by the usual mutations—dubbed "micromutations"—can accomplish is to bring about "diversification strictly within species, usually, if not exclusively, for the sake of adaptation of the species to specific conditions within the area which it is able to occupy." New species, genera, and higher groups arise at once, by cataclysmic saltations—termed macromutations or systematic mutations—which bring about in one step a basic reconstruction of the whole organism. The role of natural selection in this process becomes "reduced to the simple alternative: immediate acceptance or rejection." A new form of life having been thus catapulted into being, the details of its structures and functions are subsequently adjusted by micromutation and selection. It is unnecessary to stress here that this theory virtually rejects evolution as this term is usually understood (to evolve means to unfold or to develop gradually), and that the systematic mutations it postulates have never been observed. It is possible to imagine a mutation so drastic that its product becomes a monster hurling itself beyond the confines of species, genus, family, or class. But in what Goldschmidt has called the "hopeful monster" the harmonious system, which any organism must necessarily possess, must be transformed at once into a radically different, but still sufficiently coherent, system to enable the monster to survive. The assumption that such a prodigy may, however rarely, walk the earth overtaxes one's credulity, even though it may be right that the existence of life in the cosmos is in itself an extremely improbable event.

  - Theodosius Dobzhansky, *Genetics and the Origin of Species* (1941) 2nd revised edition

- Nothing in Biology Makes Sense Except in the Light of Evolution

  - Theodosius Dobzhansky, eponymous essay first published in *American Biology Teacher* in 1973

- Recently there's been a resurgence of rejection of evolution - possibly one of the most concrete and indisputable discoveries of science. To the extent that we deny this, we're wandering in the darkness.

  - Ann Druyan interview (http://channel.nationalgeographic.com/cosmos-a-spacetime-odyssey/videos/science-as-a-candle-in-the-darkness/)

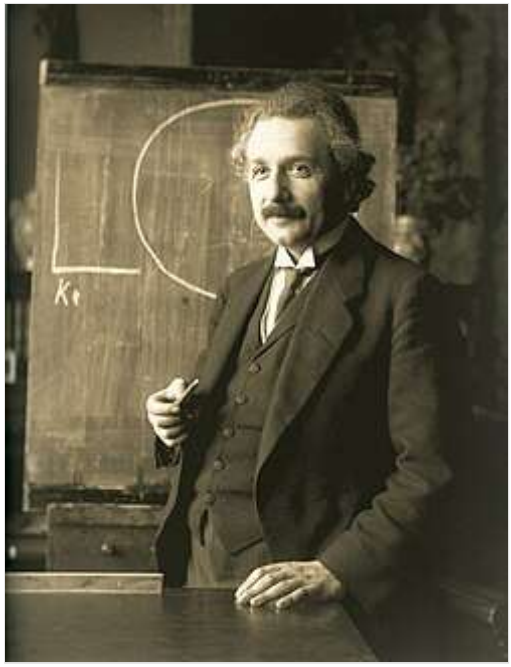
- The secular picture … proposes a purely physical and purposeless universe, inhabited by evolutionary accidents whose sense of self is probably illusory.

  - Ross Douthat, "Ideas from a Manger (https://www.nytimes.com/2013/12/22/opinion/sunday/douthat-ideas-from-a-manger.html)," *The New York Times* (21 December 2013)

E

- The further the spiritual evolution of mankind advances, the more certain it seems to me that the path to genuine religiosity does not lie through the fear of life, and the fear of death, and blind faith, but through striving after rational knowledge. $E = mc^2$

- Albert Einstein, *Science and Religion* (1941)



The further the spiritual evolution of mankind advances, the more certain it seems to me that the path to genuine religiosity does not lie through the fear of life, and the fear of death, and blind faith, but through striving after rational knowledge. E = mc² ~ Albert Einstein

- Paleontologists should recognize that much of their thought is conditioned by a peculiar perspective that they must bring to the study of life: they must look down from its present complexity and diversity into the past: their view must be retrospective. From this vantage point, it is very difficult to view evolution as anything but an easy and inevitable result of mere existence, as something that unfolds in a natural and orderly fashion. Yet we urge a different view. The norm for a species or, by extension, a community is stability. Speciation is a rare and difficult event that punctuates a system in homeostatic equilibrium. That so uncommon an event should have produced such a wondrous array of living and fossil forms can only give strength to an old idea: paleontology deals with a phenomenon that belongs to it alone among the evolutionary sciences and that enlightens all its conclusions—time.
  - Niles Eldredge & Stephen Jay Gould, "Punctuated Equilibria: An Alternative to Phyletic Gradualism," in *Models in Paleobiology* (1972)

F

- When we read in Genesis the account of Creation, we risk imagining that God was a magician, with such a magic wand as to be able to do everything. However, it was not like that. He created beings and left them to develop according to the internal laws that He gave each one, so that they would develop, and reach their fullness. He gave autonomy to the beings of the universe at the same time that He assured them of his continual presence, giving being to every reality. And thus creation went forward for centuries and centuries, millennia and millennia until it became what we know today, in fact because God is not a demiurge or a magician, but the Creator who gives being to all entities. The beginning of the world was not the work of chaos, which owes its origin to another, but it derives directly from a Supreme Principle who creates out of love. The Big-Bang, that is placed today at the origin of the world, does not contradict the divine intervention but exacts it. The evolution in nature is not opposed to the notion of Creation, because evolution presupposes the creation of beings that evolve.
  - Pope Francis, address (http://www.zenit.org/en/articles/pope-francis-address-at-inauguration-of-bronze-bust-of-benedict-xvi) at inauguration of bronze bust of Benedict XVI, Vatican Gardens, 27 October 2014

G

- God is an unnecessary hypothesis for explaining the natural world. But … this is not something that needs to be ascribed to God anyway, so it hardly implies that evolution and religion are incompatible, any more than showing that God is not needed to explain plumbing makes plumbing incompatible with religion.
  - Karl Giberson and Mariano Artigas, *Oracles of Science* (2007) p. 228
- Said the little Eohippus,
  "I am going to be a horse,
  And on my middle fingernails
  To run my earthly course!
  * * *
  I'm going to have a flowing tail!
  I'm going to have a mane!
  I'm going to stand fourteen hands high
  On the Psychozoic plain!"

- Charlotte P. S. Gilman, "Similar Cases", line 13; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.

- I do not want to discuss evolution in such depth, however, only touch on it from my own perspective: from the moment when I stood on the Serengeti plains holding the fossilized bones of ancient creatures in my hands to the moment when, staring into the eyes of a chimpanzee, I saw a thinking, reasoning personality looking back. You may not believe in evolution, and that is all right. How we humans came to be the way we are is far less important than how we should act now to get out of the mess we have made for ourselves.
  - Jane Goodall *Reason for Hope: a Spiritual Journey* (2000), with Phillip Berman P. xx.

- We applaud the burgeoning emphasis on change in regulatory genes as the stuff of morphological evolution... if only because one of us had written a book to argue that the classical, and widely ignored data on evolution by heterochrony should be exhumed and valued as a primary demonstration of regulatory change. We do not see how point mutations in structural genes can lead, even by gradual accumulations, to new morphological designs. Regulatory changes in the timing of complex ontogenetic programs seem far more promising—and potentially rapid, in conformity with our punctuational predilections. The near identity of humans and chimps for structural genes, and the evidence of major regulatory change indicated by human neoteny provides an important confirmation.
  - Stephen Jay Gould & Niles Eldredge, "Punctuated equilibria: the tempo and mode of evolution reconsidered," *Paleobiology* 6(1) (1977) pp. 115-151

- It's his last book. He wrote in in 1881, the year before he died, and usually we expect that in old age, just before death, that a great scientist will write a pontificating philosophical treatise on the nature of reality. And Darwin... wrote a book on worms. ...He was interested in worms because they were... a metaphor for his larger world-view. The worms that slowly churn the topsoil of England... that work literally beneath our feet, that we never notice, that we think are insignificant because they're so small and lowly, are in fact producing the very soil that is the basis of agriculture. And therefore Darwin uses it as a metaphor for the importance of apparently tiny things when you extend them over long periods of time. And that's what evolution is, the extension of small change (to Darwin) over vast periods of time. So the worms become a metaphor for evolution and for the whole process of temporal change, a very fascinating book.
  - "Stephen Jay Gould: The Unanswerable" (Aug 30, 2016) VPRO, *A Glorious Accident* (6 of 7) (https://www.youtube.com/watch?v=litu8JfyS44&list=PLzLGaX_JvmJoIGJFR_1M088pMz68qUtnc&index=6) 22:01.

- Los pasivos alzan el clamor llamándose apóstoles de la evolución y condenando todo lo que tiene algo de rebeldía; apelan al miedo, hacen llamamientos patéticos al patriotismo; acuden a la ignorancia y llegan a aconsejar al pueblo que se deje matar y ultrajar en los próximos comicios y vuelvan una y otra vez a ejercer pacíficamente el derecho de sufragio, a que una y otra vez lo burlen y lo asesinen los tiranos. Pero nada de salirse del fétido rincón, al cual se pretende evolucionar agregando más y más inmundicias, más y más cobardías. ... La evolución verdadera que mejore la vida de los mexicanos, no la de sus parásitos, vendrá con la revolución: ésta y aquella se completan y la primera no pueda coexistir con los anacronisnos y subterfugios que despiertan hoy los redentores del pasivismo. Para evolucionar es preciso ser libre y no podemos tener libertad si no somos rebeldes, porque nunca tirano alguno ha respetado a los pueblos pasivos; jamás un rebaño de carneros se ha impuesto con la majestad de su número inofensivo, al lobo que bonitamente los devora sin cuidarse de otro derecho que el de sus dientes. Hay que armarse, pero no de un voto inútil, que siempre valdrá tanto como el tirano quiere, sino de armas efectivas y menos candorosas cuyo uso nos traiga la evolución ascendente y no la regresiva que preconizan los luchadores pacifistas. ¡Pasividad, nunca! Rebeldía, ahora y siempre.
  - The quiescent ones raise an outcry calling themselves apostles of evolution, condemning everything that has any hint of rebelliousness; they appeal to fear and make pathetic patriotic calls; they resort to ignorance and go so far as to advise the people to let themselves be murdered and insulted during the next round of elections, to again and again peacefully exercise their right to vote, so that the tyrants mock them and assassinate them over and over. No mention of leaving the fetid corner, which they propose to improve by adding more and more filth, more and more cowardice. ... True evolution that will improve of the lives of Mexicans, rather than their parasites, will come with the Revolution. The two complement each other, and the former cannot coexist with the anachronisms and subterfuges that the redeemers of passivity employ today. To evolve we must be free, and we cannot have freedom if we are not rebels,

because no tyrant whatsoever has respected passive people. Never has a flock of sheep instilled the majesty of its harmless number upon the wolf that craftily devours them, caring for no right other than that of his teeth. We must arm ourselves, not using the useless vote that will always be worth only as much as a tyrant wants, but rather with effective and less naive weapons whose utilization will bring us ascendant evolution instead of the regressive one praised by pacifist activists. Passivity, never! Rebellion —now and always.

- Práxedis Guerrero, *Passivity and Rebellion* (29 de Agosto 1909), *Punto Rojo*, N° 3, El Paso, Texas, translated by Javier Sethness-Castro. [1] (http://blackrosefed.org/i-am-action-praxedis-guerrero/)

H

- The old "red in tooth and claw" view of the natural economy has to be updated. We need a new metaphor for the forest, one that helps us visualize plants both sharing and competing. … Evolution's engine is fired by genetic self-interest, but this manifests itself in cooperative action as well as solo selfishness. The natural economy has as many trade unions as robber barons, as much solidarity as individualistic entrepreneurship.
  - David George Haskell, *The Forest Unseen: A Year's Watch in Nature*, "December 3rd — Litter," (2012), p. 228-9
- A mighty stream of tendency.
  - William Hazlitt, *Essay*, *Why Distant Objects Please*; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.
- With the acceptance of the doctrine of evolution, old forms of thought crumbled; new ideas everywhere arose to take the place of worn-out dogmas; and we now have the spectacle of a general intellectual movement in directions strangely parallel with Oriental philosophy. The unprecedented rapidity and multiformity of scientific progress during the last fifty years could not have failed to provoke an equally unprecedented intellectual quickening among the non-scientific.
  That the highest and most complex organisms have been developed from the lowest and simplest; that a single physical basis of life is the substance of the whole living world; that no line of separation can be drawn between the animal and vegetable; that the difference between life and non-life is only a difference of degree, not of kind; that matter is not less incomprehensible than mind, while both are but varying manifestations of one and the same unknown reality – these have already become the commonplaces of the new philosophy.
  - Lafcadio Hearn in *Evolution and Ethics*, p. 61, ed. 1894 – Kokoro, Hints and Echoes of Japanese Inner Life, pp. 237-39, (1896)
- After the first recognition even by theology of physical evolution, it was easy to predict that the recognition of psychical evolution could not be indefinitely delayed; for the barrier erected by old dogma to keep men from looking backward had been broken down. And today for the student of scientific psychology the idea of pre-existence passes out of the realm of theory into the realm of fact, proving the Buddhist explanation of the universal mystery quite as plausible as any other.
  "None but very hasty thinkers," wrote the late Professor Huxley, "will reject it on the ground of inherent absurdity. Like the doctrine of evolution itself, that of transmigration has its roots in the world of reality; and it may claim such support as the great argument from analogy is capable of supplying."
  - Lafcadio Hearn in *Evolution and Ethics*, p. 61, ed. 1894 – Kokoro, Hints and Echoes of Japanese Inner Life, pp. 237-39, (1896)
- Or ever the knightly years were gone
  With the old world to the grave,
  I was a king in Babylon
  And you were a Christian Slave.
  - W. F. Henley, *Echoes*, XXXVII; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.

- Children, behold the Chimpanzee;
  He sits on the ancestral tree
  From which we sprang in ages gone.
  I'm glad we sprang: had we held on,
  We might, for aught that I can say,
  Be horrid Chimpanzees to-day.
    - Oliver Herford, *The Chimpanzee*; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.

- If we suppose Nature to have an aim on the earth, that aim can be no other than *the development of her powers in all forms, kinds and ways.* These evolutions proceed slowly, often imperceptibly; and, for the most part, they appear periodically. After a night of sleep, follows a morning of awakening. Under the shade of the former, Nature had reollected her powers, in order to meet the latter with spirit. In the ages of man, childhood continues long; body and mind advance with a slow growth, until, with collected energies, the flower of youth breaks forth, and the fruit of later years comes gradually to maturity. Very improperly have these periods of development been called revolutions. There is nothing here that revolves, but faculties are evolved, developed. Ever, the more recondite and deeper-lying come forth to view, which, without many a preceding one, could not have been brought into action. Therefore **Nature made periods. She gave the creature time to recover itself from one exertion gone through with, in order to begin, with joy, and to accomplish another and more difficult.**
    - Tithon And Aurora by Johann Gottfried Herder 1744-1800

- These odds [50,000,000,000,000,000,000 to 1] are roughly the same as you could give to the idea of just one of our body's proteins having evolved randomly, by chance. … A junkyard contains all the bits and pieces of a Boeing 747, dismembered and in disarray. A whirlwind happens to blow through the yard. What is the chance that after its passage a fully assembled 747, ready to fly, will be found standing there?
    - Fred Hoyle, *The Intelligent Universe*, 1983, p. 12-19

- Darwinian evolution is most unlikely to get even one polypeptide [chain of essential life substances] right, let alone the thousands on which living cells depend for survival. This situation is well known to geneticists and yet nobody seems to blow the whistle decisively on the theory.
    - Fred Hoyle and Chandra Wickramasinghe in their book *Evolution From Space*, cited in *The Watchtower* Magazine, 1983, 3/15; article: *Insight on the news*.

- But were this world ever so perfect a production, it must still remain uncertain, whether all the excellencies of the work can justly be ascribed to the workman. **If we survey a ship, what an exalted idea must we form of the ingenuity of the carpenter who framed so complicated, useful, and beautiful a machine? And what surprise must we feel, when we find him a stupid mechanic, who imitated others, and copied an art, which, through a long succession of ages, after multiplied trials, mistakes, corrections, deliberations, and controversies, had been gradually improving? Many worlds might have been botched and bungled, throughout an eternity, ere this system was struck out; much labour lost; many fruitless trials made; and a slow, but continued improvement carried on during infinite ages in the art of world-making.** In such subjects, who can determine, where the truth; nay, who can conjecture where the probability, lies; amidst a great number of hypotheses which may be proposed, and a still greater number which may be imagined?
    - David Hume, *Dialogues Concerning Natural Religions (https://books.google.com/books?id=E7dbAAAAQAAJ)* (1779) pp. 106-107

- **So far from a gradual progress towards perfection forming any necessary part of the Darwinian creed, it appears to us that it is perfectly consistent with indefinite persistence in one state, or with a gradual retrogression.**
    - Thomas Huxley, *Criticisms on "The Origin of the Species"* (1864)

- We have always thought that Mr. Darwin has unnecessarily hampered himself by adhering so strictly to his favourite "Natura non facit saltum." We greatly suspect that she does make considerable jumps in the way of

variation now and then, and that these **saltations give rise to some of the gaps which appear to exist in the series of known forms**.

- Thomas Huxley, *Criticisms on "The Origin of the Species"* (1864)

- **The antagonism between science and religion, about which we hear so much, appears to me to be purely factitious — fabricated, on the one hand, by short-sighted religious people who confound a certain branch of science, theology, with religion; and, on the other, by equally short-sighted scientific people who forget that science takes for its province only that which is susceptible of clear intellectual comprehension; and that, outside the boundaries of that province, they must be content with imagination, with hope, and with ignorance.**
  - Thomas Huxley, *The interpreters of Genesis and the interpreters of Nature (http://aleph0.clarku.edu/huxley/CE4/GeNat.html)* (1885)

J

- Asking general questions led to limited answers, asking limited questions turned out to provide more and more general answers.
  - François Jacob, "Evolution and Tinkering (http://adi-38.bio.ib.usp.br/ibi5023/2010/Jacob_1977.pdf)", *Science*, volume 196 (10 June 1977) p. 1162

- **Natural selection … works like a tinkerer.**
  - François Jacob, "Evolution and Tinkering (http://adi-38.bio.ib.usp.br/ibi5023/2010/Jacob_1977.pdf)", *Science*, volume 196 (10 June 1977), p. 1163)

K

- For, as planetary development, is as progressive as human or race evolution, the hour of the Pralaya's coming catches the series of worlds at successive stages of evolution; (i.e.) each has attained to some one of the periods of evolutionary progress— each stops there, until the outward impulse of the next manvantara sets it going from that very point—like a stopped time-piece rewound. p. 67 I will not enter here on the details of mineral and vegetable evolution, but I will notice only man—or—animal man. He starts downward as a simply spiritual entity—an unconscious seventh principle.... with the germs of the other six principles lying latent and dormant in him. Gathering solidity at every sphere—his six principles when passing through the worlds of effects, and his outward form in the worlds of causes (for these worlds or stages on the descending side we have other names) when he touches our planet he is but a glorious bunch of light upon a sphere itself yet pure and undefiled (for mankind and every living thing on it increase in their materiality with the planet). At that stage our globe is like the head of a newly born babe—soft and with undefined features, and man—an Adam before the breath of life Was breathed into his nostrils (to quote your own bungled up Scriptures for your better comprehension). p. 74
  - Koot Hoomi, in *The Mahatma Letters to A. P. Sinnett*, (1923)

- Man No. 1 makes his appearance at the apex of the circle of the spheres on sphere No. 1 after the completion of the seven rounds or periods of the two kingdoms (known to you) and thus he is said to be created on the eighth day (see Bible Chapter II; note verses 5 and 6 and think what is meant there by 'mist,' and verse 7 wherein Law the Universal great fashioner is termed 'God' by Christians and Jews, and understood as Evolution by Cabalists). During this first round 'animal man' runs, as you say, his cycle in a spiral. On the descending arc—whence he starts after the completion of the seventh round of animal life on his own individual seven rounds—he has to enter every sphere not as a lower animal as you understand it but as a lower man. Since during the cycle which preceded his round as a man he performed it as the highest type of animal. Your Lord God, says Bible, chapter I, verse 25 and 26—after having made all said: "Let us make man in our image," etc., and creates man an androgyne ape! (extinct on our planet) the highest intelligence in the animal kingdom and whose descendants you find in the anthropoids of to-day. p. 74

- Koot Hoomi, in *The Mahatma Letters to A. P. Sinnett*, (1923)

- The present mankind is at its fourth round (mankind as a genus or a kind not a race nota bene) of the post-pralayan cycle of evolution; and as its various races, so the individual entities in them are unconsciously to themselves performing their local earthly seven-fold cycles—hence the vast difference in the degree of their intelligence, energy and so on. Now every individuality will be followed on the ascending arc by the law of retribution—Karma and Death accordingly. The perfect man or the entity which reached full perfection (each of his seven principles being matured), will not be re-born here. p 75

  - Koot Hoomi, in *The Mahatma Letters to A. P. Sinnett*, (1923)

- We seem to exist in a hazardous time,
  Driftin' along here through space;
  Nobody knows just when we begun,
  Or how fur we've gone in the race.

  - Benjamin Franklin King, Jr., "Evolution", in *Ben King's Verse*, ed. Nixon Waterman (The Press Club of Chicago, 1894), p. 20

- Take Eva Lution, an' what does she say
  'Bout how we all sprang from an ape?
  An' there's the goriller and big chimpanzee,
  Patterned exactly our shape.
  An' I've seen some folks, an' I guess so have you,
  An' it ain't none of our bizness neither,
  That actually looked like they sprang from an ape,
  An' didn't have fur to spring either.

  - Benjamin Franklin King, Jr., "Evolution", in *Ben King's Verse*, ed. Nixon Waterman (The Press Club of Chicago, 1894), p. 21

- Evolution is at the heart of who *we* are, what life is on this planet.

  - Dan Koeppel, *To See Every Bird on Earth* (2005), p. xvi

- The important point is that all the standard attributes assigned to God in our history could equally well be the characteristics of biological entities who billions of years ago were at a stage of development similar to man's own and evolved into something as remote from man as man is remote from the primordial ooze from which he first emerged.

  - Stanley Kubrick, "*Playboy* interview" (http://paulnahm.blogspot.com/2010/06/playboy-interview-wstanley-kubrick-in.html), (1968)

- Evolution moves towards greater complexity, greater elegance, greater knowledge, greater intelligence, greater beauty, greater creativity, and greater levels of subtle attributes such as love. In every monotheistic tradition God is likewise described as all of these qualities, only without limitation: infinite knowledge, infinite intelligence, infinite beauty, infinite creativity, infinite love, and so on. Of course, even the accelerating growth of evolution never achieves an infinite level, but as it explodes exponentially it certainly moves rapidly in that direction. So evolution moves inexorably towards this conception of God, although never quite reaching this ideal. We can regard, therefore, the freeing of our thinking from the severe limitations of its biological form to be an essentially spiritual undertaking.

  - Ray Kurzweil (2005), *The Singularity Is Near*

L

- If men understood the plan of evolution, instead of working each for his own personal ends they would all join together as a community and work harmoniously for the good of all with mutual tolerance and

forbearance. It is obvious that if this were done all of these evils would almost immediately cease or at any rate could very shortly be removed. p. 326

  - Charles Webster Leadbeater, *Some Glimpses of Occultism: Ancient and Modern* (1903)

- **This is a school in which no pupil ever fails; every one must go on to the end. He has no choice as to that; but the length of time which he will take in qualifying himself for the higher examinations is left entirely to his own discretion.** The wise pupil, seeing that school-life is not a thing in itself, but only a preparation... endeavours to comprehend as fully as possible the rules of his school, and shapes his life in accordance with them as closely as he can, so that no time may be lost in the learning of whatever lessons are necessary. He co-operates intelligently with the Teachers, and sets himself to do the maximum of work which is possible for him, in order that as soon as he can he may come of age and enter into his kingdom as a glorified ego.

  - Charles Webster Leadbeater, *A Textbook of Theosophy, Chapter VII* (http://blavatskyarchives.com/theosophypdfs/leadbeater_textbook_of_theosophy_1918.pdf), (1912)

The Existence of Perfected Men is one of the most important of the many new facts which Theosophy puts before us. It follows logically from the other great Theosophical teachings of karma and evolution by reincarnation. As we look round us we see men obviously at all stages of their evolution — many far below ourselves in development, and others who in one way or another are distinctly in advance of us... ~ C. W. Leadbeater

- Theosophy explains to us the laws under which this school-life must be lived, and in that way gives a great advantage to its students. The first great law is that of evolution. Every man has to become a perfect man, to unfold to the fullest degree the divine possibilities which lie latent within him, for that unfoldment is the object of the entire scheme so far as he is concerned. The second great law under which this evolution is taking place is the law of cause and effect. There can be no effect without its cause, and every cause must produce its effect. They are in fact not two but one, for the effect is really part of the cause, and he who sets one in motion sets the other also. There is in Nature no such idea as that of reward or punishment, but only of cause and effect. Anyone can see this in connection with mechanics or chemistry...

  - Charles Webster Leadbeater, *A Textbook of Theosophy, Chapter VII* (1912)

- The Existence of Perfected Men is one of the most important of the many new facts which Theosophy puts before us. It follows logically from the other great Theosophical teachings of karma and evolution by reincarnation. As we look round us we see men obviously at all stages of their evolution—many far below ourselves in development, and others who in one way or another are distinctly in advance of us. Since that is so, there may well be others who are very much further advanced; indeed, if men are steadily growing better and better through a long series of successive lives, tending towards a definite goal, there should certainly be some who have already reached that goal.

  - C. W. Leadbeater in *The Masters and the Path*, (1925), p. 2

- Since in the course of our development we have become able to communicate with the Adepts, we have naturally asked them with all reverence how they have attained to that level. They tell us with one accord that no long time ago they stood where we stand now. They have risen out of the ranks of ordinary humanity, and they have told us that we in time to come shall be as they are now, and that the whole system is a graded evolution of Life extending up and up, further than we can follow it, even unto the Godhead itself. We find that as there are definite stages in the earlier evolution— the vegetable above the mineral, the animal above the vegetable and the human above the animal—so in the same way the human kingdom has a definite end, a boundary at which it passes into a kingdom distinctly higher than itself, that beyond men there are the Supermen.

  - C. W. Leadbeater in *The Masters and the Path*, (1925), p. 9

- In the study of this system of evolution, we have learnt that there are in every man three great divisions—body, soul and spirit; and each of these is capable of further subdivision. That is the definition which was given by St. Paul two thousand years ago. The Spirit or Monad is the breath of God (for the word spirit means breath, from the Latin spiro), the divine spark which is truly the Man, though it may more accurately be described as hovering over man as we know him. The scheme of its evolution is that it should descend into matter, and through its descent obtain definiteness and accuracy in material detail.
    - C. W. Leadbeater in *The Masters and the Path*, (1925),p. 10

This is a school in which no pupil ever fails; every one must go on to the end. He has no choice as to that; but the length of time which he will take in qualifying himself for the higher examinations is left entirely to his own discretion. ~ C. W. Leadbeater

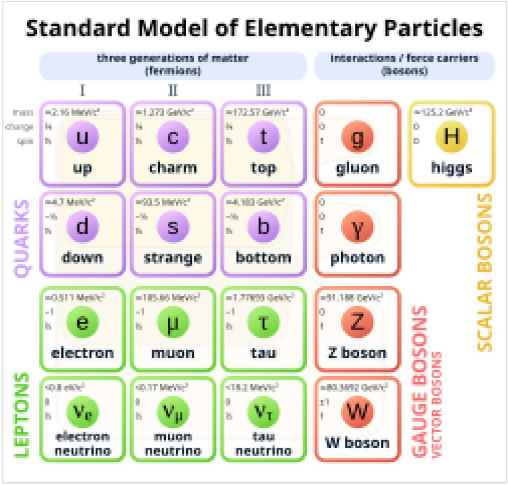
- I wouldn't get out of bed for 25,000 genes, and we don't find form in the genome. We share most of our DNA with chimpanzees, but nowhere in the genome have we found what it is that makes us so different from chimps.
    - James Le Fanu quoted in "For God's sake, have Charles Darwin's theories made any difference to our lives? (http://wwrn.org/articles/30021/?&place=europe&section=education)" by Bryan Appleyard, *The Sunday Times* [of London] (11 January 2009)
- Why don't we see gradual transition in the sequences of fossils? According to Darwin, and the current neo-Darwinists, the fossil record has gaps in it because of the haphazard way in which fossilization occurs — it is bound to be an imperfect record of the history of life. But is it? Is the jerky and abrupt nature of the record really just due to 'gaps', or does it reflect the way evolution actually happened? There is a strong feeling among leading palaeontologists that the punctuated history shown by fossils reflects the way life has evolved — in leaps and bounds rather than in gradual transition. There is also a growing sense that there is much more to understanding 'macroevolution' — the large-scale picture one gets from the fossils — than the simple idea of natural selection can alone explain.
    - Brian Leith, *The Descent of Darwin: A Handbook of Doubts about Darwinism*, (Collins: London, 1982) p. 23.

M

- [P]hysical scientists who desire, unselfconsciously, to uplift their fellow humans, endure with difficulty the thought that the destiny of mankind rests supinely in the power of the unbound electron. Mechanistic determinism is abhorred just as whole-heartedly by many a man of letters who sees no logical escape from its tentacles, as it is by "fundamentalist" preachers who see in the triumph of materialism a prospective loss of their own bread and butter. Most dreaded of all mechanistic tenets, apparently, is Darwinian evolution. That monkey has made man in his own image is felt to be a degrading thought. Why? Because such a conclusion is taken to taken to mean that man, once made, continues to be controlled by the same elementary forces which originally produced him. But biological evolution, even if true, entails no such implications. Monkey (or the common ancestor), may have caused man to evolve into his present form ; but man, on the other hand, can now create new types of monkeys at will, by exercising a controlling influence over their breeding habits. And this is the very type of causation idealized by the vitalists. Man, the complex, sets causes in motion which influence the nature of monkey, the simpler animal. Moreover, while the materialistic supposition that monkey originally created man is beyond our present powers of verification, the influence exercised by man over monkey can be observed, any day, in the laboratory. In this argument, at least, we must concede that the vitalists' variety of causation is more solidly upheld by facts than is the mechanistic type of cause raised by materialists to epic grandeur in the sage of biological evolution. We must admit that while the vitalists begin their theorizing with fictional flights, the materialists conclude their

doctrines with an almost equally speculative sublimation of their underlying emotional set. Also, in justice to both, it may be said that the vitalistic account of causation is just as much an accurate observation of physical fact, as is the mechanistic account. Simpler energy units constantly influence more complex units and may, under favourable conditions, control their behavior, while more intricate assemblages of force, by virtue of new attributes derived from their complexity, as constantly compel compliance from cruder types of matter, and do, under our very eyes, completely regulate the simpler energy forms.
Physical science must and does include both mechanistic and vitalistic types of causation.

  - William Moulton Marston, "The Emotions of Normal People" (https://archive.org/details/emotionsofnormal032195mbp/page/n25/mode/2up), London Kegan Paul, Trench, Trubner & Co Ltd. New York: Harcourt, Brace and Company. 1928. Ch.1 "Normalcy and Emotion", Ch.2, "Materialism, Vitalism and Psychology", pp.9-10



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- Ever since language allowed human cultural evolution to impinge upon age-old processes of biological evolution, humankind has been in a position to upset older balances of nature in quite the same fashion as disease upsets the natural balance within a host's body. Time and again, a temporary approach to stabilization of new relationships occurred as natural limits to the ravages of humankind upon other life forms manifested themselves. Yet, sooner or later, and always within a span of time that remained miniscule in comparison with the standards of biological evolution, humanity discovered new techniques allowing fresh exploitation of hitherto inaccessible forms of life.

  - William Hardy McNeill, *Plagues and Peoples* (1976)

- Evolution is a two-part process.

1. Genetic variation is created through mutation or recombination.
2. Variation spreads or is eliminated from populations.

- - Justin Meyer, The Evolution of Infectious Diseases with Justin Neyer (https://www.youtube.com/watch?v=4z2Z_Ng1aEM). University of California Television (UCTV), YouTube (14 April 2020). (quote at 27:33 of 1:14:02)

- Evolution isn't just a story about where we came from. It's an epic at the center of life itself. Far from robbing our lives of meaning, it instills an appreciation for the beautiful, enduring, and ultimately triumphant fabric of life that covers our planet. Understanding that doesn't demean human life - it enhances it.

  - Kenneth R. Miller in: *Academic Atheism (https://academicatheism.tumblr.com/post/18224490444/in-american-today-anti-evolutionism-matters)*, academicatheism.tumblr.com

- **Another curious aspect of the theory of evolution is that everybody thinks he understands it.** I mean philosophers, social scientists, and so on. While in fact very few people understand it, actually, as it stands, even as it stood when Darwin expressed it, and even less as we now may be able to understand it in biology.

  - Jacques Monod, *On the Molecular Theory of Evolution* (1974), reprinted in Mark Ridley (editor) *Evolution* (1997) p. 389

- Indeed, if I may be allowed the anachronism, the Hindus were Spinozists more than two thousand years before the advent of Spinoza, and Darwinians many centuries before Darwin, and Evolutionists many centuries before the Doctrine of Evolution was accepted by the scientists of the present age, and before any word like 'Evolution' existed in any language of the world.

- Sir Monier Monier Williams. source: The Inner Teachings of the Philosophies and Religions of India, Yogi Ramacharaka.Quoted from Gewali, Salil (2013). Great Minds on India. New Delhi: Penguin Random House.

N

- Man, in that sense, will never die, because there may never be a taxonomical point in his evolutionary progress that can be determined as the last stage of man in the cline turning him into Neohomo, or some horrible throbbing slime.
  - Vladimir Nabokov, *Ada or Ardor: A Family Chronicle* (1969)
- We do not have to adapt to the environment. We will change the environment to suit us.
  - Terry Nation, for Dalek in *The Daleks*
- Pouter, tumbler, and fantail are from the same source;
  The racer and hack may be traced to one Horse;
  So men were developed from monkeys of course,
  Which nobody can deny.
  - Charles Neaves, *The Origin of Species*; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.
- Most of us make one of two basic assumptions: we view the universe as a result of random events and life on this planet a matter of chance; or we assume an Intelligence beyond the universe who gives the universe order, and life meaning.
  - Armand Nicholi, *The Question of God (http://www.pbs.org/wgbh/questionofgod/why/)* (2002) Prologue, p. 7

O

- **Evolution is cleverer than you are.**
  - Leslie E. Orgel. Reported in Dunitz, Jack D.; Joyce, Gerald F. (2013) . "Leslie E. Orgel (http://www.nasonline.org/publications/biographical-memoirs/memoir-pdfs/orgel-leslie.pdf)". *Biographical Memoirs, National Academy of Sciences*.—p. 11
- We conclude — unexpectedly — that there is little evidence for the neo-Darwinian view: its theoretical foundations and the experimental evidence supporting it are weak, and there is no doubt that mutations of large effect are sometimes important in adaptation. We hasten to add, however, that we are not "macromutationists" who believe that adaptations are nearly always based on major genes. The neo-Darwinian view could well be correct. … We hope to encourage evolutionists to reexamine this neglected question and to provide evidence to settle it.
  - H. Allen Orr [Center for Population Biology, University of California, Davis], & Jerry A. Coyne [Department of Ecology and Evolution, University of Chicago], "The Genetics of Adaptation: A Reassessment," The American Naturalist, Vol. 140, No. 5 (November 1992), p. 726
  - (The first sentence is sometimes quoted in isolation (http://members.iinet.net.au/~sejones/darwin03.html) by creationists to suggest incorrectly that "there is little evidence" for evolution. In fact, the "neo-Darwinian view" under question is the relative importance of many small changes versus a few large changes.)

P

- Development of an organism from a single germ cell into a multicellular entity is a self-organizing system from any point of view and I wish to contend that this self-organizing system is a subsystem of the self-organizing system called 'evolution'.
  - Gordon Pask *An Approach to Cybernetics* (1961) p. 103-104
- It can therefore be said that, from the viewpoint of the doctrine of the faith, there are no difficulties in explaining the origin of man in regard to the body, by means of the theory of evolution.
  - Pope John Paul II, Man is a Spiritual and Corporeal Being (http://www.vatican.va/holy_father/john_paul_ii/audiences/alpha/data/aud19860416en.html), 16 April 1986
- New knowledge has led to the recognition of the theory of evolution as more than a hypothesis. It is indeed remarkable that this theory has been progressively accepted by researchers, following a series of discoveries in various fields of knowledge. The convergence, neither sought nor fabricated, of the results of work that was conducted independently is in itself a significant argument in favor of this theory.
  - Pope John Paul II, address (http://www.newadvent.org/library/docs_jp02tc.htm) to the Pontifical Academy of Sciences, 22 October 1996
- Even in her transfigured state, the thought of goal-oriented evolution gave Evelyn the creeps. It smacked of Intelligent Design, the ludicrous evangelism of engineers masquerading as biologists, their PowerPoint presentations riddled with evasions and half-truths and pseudoscience. Such thinking confused causes and effects; it complicated unnecessarily the idea of evolution, a field where explanations are valuable only for their parsimony.
  - Joe Pitkin, *A Murmuration of Starlings* in Rich Horton (ed.) *The Year's Best Science Fiction & Fantasy 2013,* p. 367 (Originally published in Analog magazine, June 2012)
- The Church does not forbid that, in conformity with the present state of human sciences and sacred theology, research and discussions, on the part of men experienced in both fields, take place with regard to the doctrine of evolution, in as far as it inquires into the origin of the human body as coming from pre-existent and living matter.
  - Pope Pius XII, Encyclical on Humani Generis (http://www.newadvent.org/library/docs_pi12hg.htm), 12 August 1950
- Evolution proceeds on three general lines: the spiritual, the mental-emotional,and the astral-vital; and the physical body is the channel through which all these in wrapped capacities, tendencies, and powers, express themselves on the physical plane, if the environment at any particular moment or at any particular passage of time be appropriate and fit for the expression of this or that or of some other such attribute, power, or faculty. The combination of these two — the inner urge, the drive, and a fit and appropriate environment or field— means the evolving, the coming out into manifestation, the expression, of those inner forces or powers.
  As is evident, this includes a far wider and vaster conception of evolution than any that has hitherto been entertained in the ranks of scientific researchers.
  - G. de Purucker, *Man in Evolution* (https://www.theosociety.org/pasadena/man-evol/mie-hp.htm), Chapter 10 (1941)

Q

R

- An organism’s adaptations to its environment, such as the dandelion seed’s parachute, are the result of evolution. Evolution is the process of change that has transformed life on Earth from its earliest beginnings to the diversity of organisms living today. Because evolution is the fundamental organizing principle of biology, it is the core theme of this book.
    - Jane B. Reece, Lisa A. Urry, et al. Campbell Biology (10th ed., 2014), Ch. 1. Evolution, the Themes of Biology, and Scientific Inquiry
- There is consensus among biologists that evolution is the core theme of biology. The evolutionary changes seen in the fossil record are observable facts. Furthermore, as we’ll describe, evolutionary mechanisms account for the unity and diversity of all species on Earth.
    - Jane B. Reece, Lisa A. Urry, et al. Campbell Biology (10th ed., 2014), Ch. 1. Evolution, the Themes of Biology, and Scientific Inquiry
- Most educated people are aware that we're the outcome of nearly 4 billion years of Darwinian selection, but many tend to think that humans are somehow the culmination. Our sun, however, is less than halfway through its lifespan. It will not be humans who watch the sun's demise, 6 billion years from now. Any creatures that then exist will be as different from us as we are from bacteria or amoebae.
    - Sir Martin Rees, Lecture (2006), reprinted as *Dark Materials*. As cited in J.G. Ballard, 'The Catastrophist', collected in *Christopher Hitchens, Arguably: Selected Essays* (2011), 353
- Look, you pinheads who attack me for this, you guys are just desperate. … How did that little amoeba get here, crawl out there? How'd it do it? Come on. … Okay, if we have existence, if we have life on earth, how come they don't have it on the other planets? Were we just lucky? Some meteor do this? Boom. Come on. You know, I see this stuff, it's desperate. As I've said many times, it takes more faith to not believe and to think that this was all luck - all this human body - the intricacies of it and everything else, all luck --- than it does to believe in a deity. There yah go.
    - Bill O'Reilly, "Backstage Conversation" video (http://skepticalteacher.wordpress.com/2011/02/02/bill-oreilly-doubles-down-on-the-stupid-howd-the-moon-get-there/), posted to BillOReilly.com on 3 February 2011
- Germs and disease vectors are moving targets, and evolution is the reason for this. Evolution happens in hospitals... over the course of just a few months. What you don't know about evolution can kill you.
    - Stanley A. Rice, *Life of Earth: Portrait of a Beautiful, Middle-aged Stressed-out World* (2011)
- The fact is that your plane originated because enough entities needed certain types of experience to warrant such a creation, and they set about forming it through the process of evolution.
    - Jane Roberts, in *The Early Sessions: Book 1*, Session 31, Page 236
- I shall finish my address to woman with a page from The Teaching of Life: “When nations started disunity, the result was self-destruction. And only a return to balance can stop this self-destruction. Humanity does not apply the principles of creativeness in right proportion and thus violates the foundations of Being. When by the law of the Cosmic Magnet the lower forms are subordinated to the higher, this concerns only the energies which should be transmuted. But when the Origins are called to create and give life, it is impossible to remove one of the Origins without self-destruction. Therefore, **humanity will start its real evolution only when both Origins are affirmed in life**. All principles which do not include the understanding of the dual Origin can only increase the lack of balance. Humanity must understand the law of the Cosmic Magnet. Much can be done for evolution by the realization of the grandeur of the dual Origin which is the basis of Life.”

- Helena Roerich *Letters I,* (1 March 1929)

- Could the terrors and crimes of today be possible if both Origins had been balanced? In the hands of woman lies the salvation of humanity and of our planet. Woman must realize her significance, the great mission of the Mother of the World; she should be prepared to take responsibility for the destiny of humanity. Mother, the life-giver, has every right to direct the destiny of her children. The voice of woman, the mother, should be heard amongst the leaders of humanity. The mother suggests the first conscious thoughts to her child. She gives direction and quality to all his aspirations and abilities. But the mother who possesses no thought of culture can suggest only the lower expressions of human nature.
  But in her striving toward education, woman must remember that all educational systems are only the means for the development of a higher knowledge and culture. The true culture of thought is developed by the culture of spirit and heart. Only such a combination gives that great synthesis without which it is impossible to realize the real grandeur, diversity, and complexity of human life in its cosmic evolution. Therefore, while striving to knowledge, may woman remember the Source of Light and the Leaders of Spirit—those great Minds who, verily, created the consciousness of humanity. **In approaching this Source, this leading Principle of Synthesis, humanity will find the way to real evolution.**
  - Helena Roerich *Letters I,* (1 March 1929)

- Its Humanity develops fully only in the Fourth—our Fourth—our present Round. Up to this fourth Life-Cycle, it is referred to as 'humanity' only for lack of a more appropriate term. Like the grub which becomes chrysalis and butterfly, Man, or rather that which becomes man, passes through all the forms and kingdoms during the first Round and through all the human shapes during the two following Rounds... During the three Rounds to come, Humanity, like the globe [planet] on which it lives, will be ever tending to reassume its primeval form, that of a Dhyan-Chohanic Host. Man tends to become a God and then—GOD, like every other atom in the Universe...
  - Helena Roerich *Letters II,* (16 November 1935)

- *Equidem æterna constitutione crediderim nexuque causarum latentium et multo ante destinatarum suum quemque ordinem immutabili lege percurrere.*
  - For my own part I am persuaded that everything advances by an unchangeable law through the eternal constitution and association of latent causes, which have been long before predestinated.
  - Quintus Curtius Rufus, *De Rebus Gestis Alexandri Magni*, V, 11, 10; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.

- Owing to the identification of religion with virtue, together with the fact that the most religious men are not the most intelligent, a religious education gives courage to the stupid to resist the authority of educated men, as has happened, for example, where the teaching of evolution has been made illegal. So far as I can remember, there is not one word in the Gospels in praise of intelligence; and in this respect ministers of religion follow gospel authority more closely than in some others.
  - Bertrand Russell Education and the Social Order (1932) p. 110.

S

- **When things get bad enough, then something happens to correct the course. And it is for that reason that I speak of evolution as an error-making and error-correcting process. And if we can be ever so much better — ever so much *slightly* better — at error correcting than at error making, then we'll make it.**
  - Jonas Salk, in "Jonas Salk, "A Wise and Good Ancestor" (http://www.archive.org/details/openmind_ep1234) interview with Richard D. Heffner on *The Open Mind* (11 May 1985)

- **I am interested in a phase that I think we are entering. I call it "teleological evolution," evolution with a purpose.** The idea of evolution by design, designing the future, anticipating the future. I think of the need for more wisdom in the world, to deal with the knowledge that we have. **At one time we had wisdom, but**

little knowledge. Now we have a great deal of knowledge, but do we have enough wisdom to deal with that knowledge?

  - Jonas Salk, in Academy of Achievement interview, in San Diego, California (16 May 1991) (http://www.achievement.org/autodoc/printmember/sal0int-1)

- I judge things from an evolutionary perspective — "How does this serve and contribute to the process of our own evolution?" — rather than think of good and evil in moral terms. **I see the triumph of good over evil as a manifestation of the error-correcting process of evolution.**

  - Jonas Salk, in Academy of Achievement interview, in San Diego, California (16 May 1991)

- I speak about universal evolution and teleological evolution, because I think the process of evolution reflects the wisdom of nature. I see the need for wisdom to become operative. We need to try to put all of these things together in what I call an evolutionary philosophy of our time.

  - Jonas Salk, in Academy of Achievement interview, in San Diego, California (16 May 1991)

- Things evolve to evolve. Evolutionary processes are the linchpin of change. These processes of discovery represent a complexity of simple systems that flux in perpetual tension as they teeter at the edge of chaos. This whirlwind of emergence is responsible for the spontaneous order and higher, organized complexity so noticeable in biological evolution—one–celled critters beefing up to become multicellular organisms.

  - L.K. Samuels,*In Defense of Chaos: The Chaology of Politics, Economics and Human Action*, Cobden Press (2013) p. 335.

- The hallmark of evolution is its ability to process situations and generate order without relying on the crutch of a conscious designer. Most complex systems grow organically, solutions evolving through unguided and mindless forces, never reaching any final state.

  - L.K. Samuels, *In Defense of Chaos: The Chaology of Politics, Economics and Human Action*, Cobden Press (2013) p. 338.

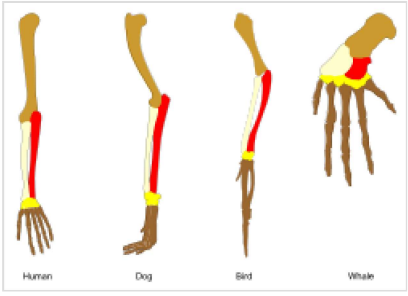
- Molecular biologists may have ignored mitochondria because they did not immediately recognize the far-reaching implications and applications of the discovery... It took time to accumulate a database of sufficient scope and content to address the many challenging questions related to anthropology, disease, evolution, and more.

  - Immo E. Scheffler, as quoted by Nick Lane, *Power, Sex, Suicide: Mitochondria and the Meaning of Life* (2005) pp. 6-7.

- I do not believe in evolution … and none of your professors believe in evolution. … Beliefs are opinions.

  - Eugenie C. Scott, "The Evolution of Creationism," address at Oberlin College, Oberlin, Ohio (1 May 2007)
  - [Reported by Caitlin Duke, "Evolution and Creationism," *The Oberlin Review* (4 May 2007) volume 135, number 23, page 2 (http://cdm15963.contentdm.oclc.org/cdm/ref/collection/p15963coll9/id/155898).]

- If I did not think you a good tempered & truth loving man I should not tell you that... I have read your book [*On the Origin of Species*] with more pain than pleasure. Parts of it I admired greatly; parts I laughed at till my sides were almost sore; other parts I read with absolute sorrow; because I think them utterly false & grievously mischievous— You have *deserted*—after a start in that tram-road of all solid physical truth—the the true method of induction. … I have written in a hurry & in a spirit of brotherly love.



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    - Adam Sedgwick, letter (https://www.darwinproject.ac.uk/letter/?docId=letters/DCP-LETT-2548.xml&query=%22the%20true%20method%20of%20induction%22) to Darwin (24 November 1859); reprinted in *The Correspondence of Charles Darwin* volume 7, p. 396

- You grow, we all grow, we're made to grow. You either evolve or disappear.
    - Tupac Shakur, as quoted in *Tupac: Resurrection* (2003).

- This argument [that life is too improbable to have arisen by chance] comes up repeatedly: its latest manifestation is Hoyle's discussion of the likelihood of a wind blowing through a junkyard assembling a Boeing 707 [sic]. What is wrong with it? Essentially, it is that no biologist imagines that complex structures arise in a single step.
    - John Maynard Smith, *The Problems of Biology*, 1986, p. 49

- **Thus life by life and love by love**
  We passed through the cycles strange,
  And breath by breath and death by death
  We followed the chain of change.
    - Langdon Smith, in "Evolution" (1895)

- When you were a tadpole and I was a fish, in the Palæozoic time
  And side by side in the sluggish tide, we sprawled in the ooze and slime.
    - Langdon Smith, *A Toast to a Lady* (Evolution); printed in *The Scrap Book* (April, 1906); Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.

- Civilization is a progress from an indefinite, incoherent homogeneity toward a definite, coherent heterogeneity.
    - Herbert Spencer, *First Principles*, Chapter XVI. Par. 138; also Chapter XVII. Par. 145. He summaries the same: From a relatively diffused, uniform, and indeterminate arrangement to a relatively concentrated, multiform, and determinate arrangement; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.

- This survival of the fittest, which I have here sought to express in mechanical terms, is that which Mr. Darwin has called "natural selection, or the preservation of favoured races in the struggle for life."
    - Herbert Spencer, *Principles of Biology*, *Indirect Equilibration*; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.

- Evolution is a change from an indefinite, incoherent, homogeneity to a definite, coherent, heterogeneity, through continuous differentiations and integrations.
    - Herbert Spencer, *First Principles* (1862)
    - Evolution is a change from a no-howish untalkaboutable all-alikeness by continous sticktogetheration and somethingelsification.
        - A parody of the above quote, often attributed to William James, 1880 (Lecture Notes 1880-1897), but see [2] (http://evolvethought.blogspot.com/2005/01/spencer-and-critics.html)

- survival of the fittest
    - Herbert Spencer, *Principles of Biology* (1864) p. 444 (http://books.google.com/books?id=SRkRAAAAYAAJ&pg=PA444)

- Darwinian man though well behaved, at best is only a monkey shaved!
    - Arthur Sullivan and libretto by W. S. Gilbert, Princess Ida (1884)

T

- Out of the dusk a shadow,
  Then a spark;
  Out of the cloud a silence,
  Then a lark;
  Out of the heart a rapture,
  Then a pain;
  Out of the dead, cold ashes,
  Life again.
  - John Banister Tabb, *Evolution*; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.
- Solana, the Ood aren't born like this. They can't be. A species born to serve could never evolve in the first place. What does the company do to make them obey?
  - David Tennant as The Doctor in "Planet of the Ood", *Doctor Who*, (April 19, 2008), written by Keith Temple.
- You idiot. They're born with their brains in their hands. Don't you see, that makes them peaceful. They've got to be, because a creature like that would have to trust anyone it meets.
  - Catherine Tate as Donna Noble in "Planet of the Ood", *Doctor Who*, (April 19, 2008), written by Keith Temple.
- The Lord let the house of a brute to the soul of a man,
  And the man said, "Am I your debtor?"
  And the Lord—"Not yet: but make it as clean as you can,
  And then I will let you a better."
  - Alfred Tennyson, *By an Evolutionist*; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.
- Is there evil but on earth? Or pain in every peopled sphere?
  Well, be grateful for the sounding watchword "Evolution" here.
  - Alfred Tennyson, *Locksley Hall Sixty Years After* (1886), line 198; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.
- Evolution ever climbing after some ideal good
  And Reversion ever dragging Evolution in the mud.
  - Alfred Tennyson, *Locksley Hall Sixty Years After* (1886), line 200; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.
- Nature, red in tooth and claw
  - Alfred Lord Tennyson, in 56th stanza of poem In Memoriam A.H.H. 1849
- When I was a shepherd on the plains of Assyria.
  - Henry David Thoreau; Reported in *Hoyt's New Cyclopedia Of Practical Quotations* (1922), p. 241-42.
- One morning just after sunrise: The first flower ever to appear on the planet opens up to receive the rays of the sun. Prior to this momentous event that heralds an evolutionary transformation in the life of plants, the planet had already been covered in vegetation for millions of years... Much later, those delicate and fragrant beings we call flowers would come to play an essential part in the evolution of consciousness of another species. Humans would increasingly be drawn to and fascinated by them... They provided inspiration to countless artists, poets, and mystics... Jesus tells us to contemplate the flowers and learn from then how to

live. The Buddha is said to have given a “silent sermon” once during which he held up a flower and gazed at it. After a while, one of those present, a monk called Mahakasyapa, began to smile... Seeing beauty in a flower could awaken humans, however briefly, to the beauty that is an essential part of their own innermost being, their true nature.

  - Eckhart Tolle, in *A New Earth: Awakening to Your Life’s Purpose* (2005)

- The first recognition of beauty was one of the most significant events in the evolution of human consciousness. The feelings of joy and love are intrinsically connected to that recognition. Without our fully realizing it, flowers would become for us an expression in form of that which is most high, most sacred, and ultimately formless within ourselves. Flowers... would become like messengers from another realm, like a bridge between the world of physical forms and the formless. They not only had a scent that was delicate and pleasing to humans, but also brought a fragrance from the realm of spirit.

  - Eckhart Tolle, in *A New Earth: Awakening to Your Life’s Purpose* (2005)

V

- Looking around us, what do we find? A continuous change.... This is what is called evolution. It is an old, old idea, as old as human society, only it is getting fresher and fresher as human knowledge is progressing. .. This coming out of the fine and becoming gross, simply changing the arrangements of its parts, as it were, is what in modern times called evolution. This is very true, perfectly true; we see it in our lives. No rational man can possibly quarrel with these evolutionists ... The theory of evolution, which is the foundation of almost all the Indian schools of thought, has now made its way into the physical science of Europe.

  - Swami Vivekananda, quoted from Dr Pingali Gopal, Evolution, Religion, and Indian Traditions-whose Clash Is It Anyway? (http://indiafacts.org/evolution-religion-and-indian-traditions-whose-clash-is-it-anyway/)

W

- They were only built by chance; maybe a tweak or two to give them green eyes, or better hearing, or to keep them safe from cancer. The engines of their creation had no foresight and no future. All that matters to evolution is what works in the moment.

  - Peter Watts, *Hotshot,* in *Reach for Infinity* (2014) edited by Jonathan Strahan, and published by Solaris ISBN 978-1-78108-203-4, p. 337

- Organic evolution has its physical analogue in the universal law that the world tends, in all its parts and particles, to pass from certain less probable to certain more probable configurations or states. This is the second law of thermodynamics. It has been called *the law of evolution of the world*; and we call it, after Clausius, the Principle of *Entropy*, which is a literal translation of *Evolution* in Greek.

  - D'Arcy Wentworth Thompson, *On Growth and Form* (http://archive.org/details/ongrowthform00thom) (1917)

- Aristotle especially, both by speculation and observation... reached something like the modern idea of a succession of higher organizations from lower, and made the fruitful suggestion of "a perfecting principle" in Nature. With the coming in of Christian theology this tendency toward a yet truer theory of evolution was mainly stopped, but the old crude view remained...

  - Andrew Dickson White, *A History of the Warfare of Science with Theology in Christendom*, Ch.1 (1896)

- Just as the line of astronomical thinkers from Copernicus to Newton had destroyed the old astronomy, in which the earth was the center, and the Almighty sitting above the firmament the agent in moving the heavenly bodies about it with his own hands, so now a race of biological thinkers had destroyed the old idea of a Creator minutely contriving and fashioning all animals to suit the needs and purposes of man.

- Andrew Dickson White, *A History of the Warfare of Science with Theology in Christendom* Ch.1, p. 49 (1896)

- Samuel Butler's famous aphorism that the chicken is only an egg's way of making another egg has been modernized: **the organism is only DNA's way of making more DNA**.
  - Edward O. Wilson, *Sociobiology: The New Synthesis* (Cambridge, MA: Harvard University Press, 1975), p. 4
  - Sometimes misquoted as "People are DNA's way of making more DNA."

- **Taylor**: A planet where apes evolved from men?
  - Planet of the Apes (1968 film) by Michael Wilson and Rod Serling

- Of course, like every other man of intelligence and education I do believe in organic evolution. It surprises me that at this late date such questions should be raised.
  - Woodrow Wilson in a letter to Winterton C. Curtis (29 August 1922)

- And hear the mighty stream of tendency
  Uttering, for elevation of our thought,
  A clear sonorous voice, inaudible
  To the vast multitude.
  - William Wordsworth, *The Excursion* (1814), IX. 87

"Science Fiction and the Myth of Trajectory Evolution" (6-2-2013)

"Science Fiction and the Myth of Trajectory Evolution" (https://digitalcommons.macalester.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1049&context=macreview) by Jocelyn D. Pickreign, (6-2-2013)

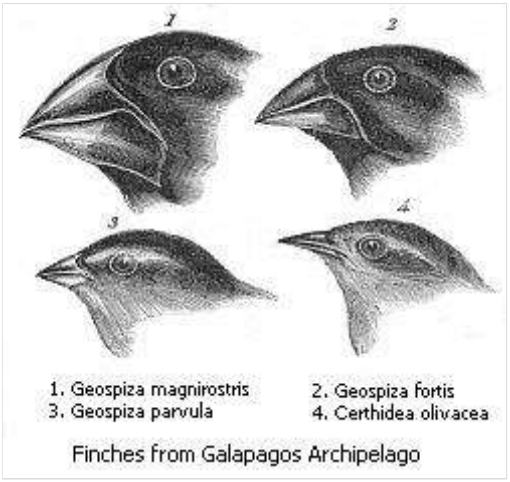
- Gould discusses iconographies like the "great chain of being" and the "march of progress" as influencing our perceptions of evolution. Today "family tree"-style pictures are beginning to replace the traditional image of the "march of progress" in biology textbooks. However, outside academia, there are still countless visual representations of evolution that maintain the fiction that evolution inevitably follows a certain predetermined linear progression and that that trajectory moves towards humanoid bodies and human or superhuman brains. Science fiction movies, TV shows, and comic books are powerful iconographies in today's society, continuing to perpetuate the myth of trajectory-based evolution. According to the sci-fi genre, evolution follows an internal "blueprint," a preset trajectory that takes organisms from simplicity to complexity for complexity's sake.
  - Jocelyn D. Pickreign, "Science Fiction and the Myth of Trajectory Evolution" (https://digitalcommons.macalester.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1049&context=macreview), *The Macalester Review*, Vol. 3 [2013], Iss. 2, Art. 1, (6-2-2013), p. 2.

- Not only is human evolution linear in the *Farscape* universe, but it also follows a pre-set trajectory towards increasing complexity. The next step after original Crichton is "advanced" Crichton, distinguished by the folded indentations in his forehead, evidence of a huge brain that is literally too big for his skull. A separate paper could be written about how extraordinarily disadvantageous such a variation would be, but what is equally interesting is the premise of the episode that states that "advanced" Crichton was "evolved" from original Crichton's DNA. The implicit argument here is that humanity's evolutionary trajectory is preset. Human beings will evolve in a particular way, regardless of anything else around them.
  - Jocelyn D. Pickreign, "Science Fiction and the Myth of Trajectory Evolution" (https://digitalcommons.macalester.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1049&context=macreview), *The Macalester Review*, Vol. 3 [2013], Iss. 2, Art. 1, (6-2-2013), p. 4.

- [I]t is interesting that the defining characteristic of this future Crichton is his extraordinary intelligence and reasoning capabilities. This furthers the idea that evolution follows a trajectory towards more complex

organisms and towards more intelligent organisms. This is consistent with the episode's premise that evolution occurs irrespective of environment, but it is inconsistent with mechanism of evolution in actuality. The only trajectory evolution follows is one towards fitness for an organism's environment. Human beings are very well adapted for our environment, but jellyfish are equally as well adapted to their environment, as are Moya's many inhabitants to their environments.

  - Jocelyn D. Pickreign, "Science Fiction and the Myth of Trajectory Evolution" (https://digitalcommons.macalester.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1049&context=macreview), *The Macalester Review*, Vol. 3 [2013], Iss. 2, Art. 1, (6-2-2013), p. 5.



Finches from Galapagos Archipelago

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- As in "My Three Crichtons", we have an episode from a science fiction show that is presenting evolution as something for which an organism's genes have a solid, unchanging blueprint: an organism's evolutionary path is preset, and by speeding up the passage of time relative to the individual, processes that would ordinarily take centuries or even millennia, like evolution, can now happen in a matter of days. What might have made more sense, if Star Trek insists on speeding up time, would be an accelerated birthrate as a result of this accelerated time, meaning that hundreds or even thousands of generations inherited slight genetic variations, were selected for or against, and (relatively) slowly evolved into the legged catfish-like creatures that the crew of Voyager discovers. In choosing not to take this route, however, "Threshold" is advancing an understanding of evolution that presents it as a linear progression encoded in an individual's DNA, and thus, through some kind of mystical science, an individual could realize his species evolutionary potential within his lifetime.

  - Jocelyn D. Pickreign, "Science Fiction and the Myth of Trajectory Evolution" (https://digitalcommons.macalester.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1049&context=macreview), *The Macalester Review*, Vol. 3 [2013], Iss. 2, Art. 1, (6-2-2013), pp. 6-7.

As in "My Three Crichtons", we have an episode from a science fiction show that is presenting evolution as something for which an organism's genes have a solid, unchanging blueprint: an organism's evolutionary path is preset, and by speeding up the passage of time relative to the individual, processes that would ordinarily take centuries or even millennia, like evolution, can now happen in a matter of days.

- The idea that evolution must naturally proceed from simple creatures to more complex creatures is almost overpowering. The X-men are frequently referred to as the "next step" in human evolution (X-Men: First Class 2011; Gresh and Weinberg 2002, 133). According to Darwin, in order for evolution to occur, an individual must exhibit a variation that makes it better suited to its environment and then that variation must be selected for and passed down to future generations. When that variation has accumulated throughout the species, the species is considered to have evolved. Playing by Darwin's rules, then, in order for the X-men to be the "next step" in human evolution, they must have a variation, that variation must prove useful in their environment, and that variation must be passed down to offspring.

  - Jocelyn D. Pickreign, "Science Fiction and the Myth of Trajectory Evolution" (https://digitalcommons.macalester.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1049&context=macreview), *The Macalester Review*, Vol. 3 [2013], Iss. 2, Art. 1, (6-2-2013), p. 8

- But, be that as it may, is this variation, or variations, beneficial to humanity in their environment? According to Lois Gresh and Robert Weinberg, the X-men do have "helpful mutations..." This point is demonstrated numerous

times in the adventures of the X-Men, where team members use their mutant powers to help them survive dangerous situations where normal humans would be killed instantly" (Gresh and Weinberg 2002, 135). What Gresh and Weinberg have overlooked, however, is that these "dangerous situations" came after the genetic variation, not before. Most of the battles the X-Men fight are either against other mutants-- such as Magneto and the Brotherhood of Evil Mutants, who have a more violent response to human oppression of mutants-- or against anti-mutant hate groups, such as the Sentinels or Friends of Humanity, whose only goal is to wipe out all mutants. All of these "dangerous situations" come up in response to the X-Men's genetic variation, meaning that this variation cannot be an adaptive response to an environment. Of course, under the theory of evolution by natural selection, every mutation need not necessarily be useful. However, the premise of the X-Men franchise is that these mutations are the foundation of the next phase of human evolution, so these mutations must provide some sort of selective advantage in order for that to be true. However, these variations seem much more likely to be selected against, since they get the X-Men into so much trouble. Assuming that the X-Men survive long enough to reproduce and care for offspring, very few potential mates are going to be willing to take the genetic risk of mating and producing offspring with them. The comics themselves support this, when the X-Men are ostracized from society as "dangerous."

Because the variations that the X-Men exhibit are flashy, complex, and, very often, associated with some mystical higher functioning of the brain (such as Xavier's telepathy and Magneto's ability to move metal with his mind), they are embraced as the next phase, regardless of environmental pressures or sexual selection.

Thus, the X-Men cannot possibly be the next stage of human evolution because their adaptations are neither advantageous, nor likely to be passed down to future generations. However, we buy into the notion that the X-Men are the logical progression of our species because they conform to our notions of evolution as something that follows a progression from simple-structured and simple-minded to physical and mental complexity. Because the variations that the X-Men exhibit are flashy, complex, and, very often, associated with some mystical higher functioning of the brain (such as Xavier's telepathy and Magneto's ability to move metal with his mind), they are embraced as the next phase, regardless of environmental pressures or sexual selection.

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See also

- Ageless Wisdom teachings
- Awakening
- Awareness
- Consciousness
- Creationism
- Darwinism
- Evolutionary game theory
- Higher self
- Initiation
- Intelligent design
- Karma
- Meditation
- *Operating Manual for Spaceship Earth*, by Buckminster Fuller, (1969)
- Primates
- Reincarnation
- Self-realization
- Service

External links

Scopes Trial Day 7: Clarence Darrow Examines William Jennings Bryan Transcript (http://law2.umkc.edu/faculty/projects/ftrials/scopes/day7.htm)

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